भारतीय मानक
Indian Standard

IS 16301 : 2017
(Superseding IS 921 : 1965, IS 922 : 1965,
IS 923 : 1965, IS 924 : 1965, IS 925 : 1965,
IS 3545 : 1982, IS 3546 : 1966 and IS 3721 : 1966)
(Reaffirmed 2022)

चाकू — विशिष्टि

Knives — Specification

ICS 97.040.60

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January 2017 **Price Group 8**

Utensil, Cutlery Domestic Hardware Sectional Committee, MED 33

FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Utensils, Cutlery Domestic Hardware Sectional Committee had been approved by the Mechanical Engineering Division Council.

In this standard the material has been modified keeping in view the availability of the indigenous materials and certain other changes which would help in implementing the Indian Standard in a better way.

This standard has been formulated by amalgamating IS 921 : 1965 ‘Specification for butcher’s knives (*first revision*), IS 922 : 1965 ‘Specification for cook’s knives (*first revision*)’, IS 923 : 1965 ‘Specification for carving knives (*first revision*)’, IS 924 : 1965 ‘Specification for bread knives (*first revision*)’, IS 925 : 1965 ‘Specification for pocket knives (*first revision*)’, IS 3545 : 1982 ‘Specification for meat chopper (*first revision*)’, IS 3546 : 1966 ‘Specification for vegetable knives’ and IS 3721 : 1966 ‘Specification for cheese cutting knives for table use’. All these standards would be withdrawn after publication of this standard.

The composition of Committee responsible for the formulation of this standard is given in Annex A.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 ‘Rules for rounding off numerical values (*revised*)’. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

KNIVES — SPECIFICATION

1 SCOPE

This standard prescribes the requirements of shape, dimension, workmanship and tests for table knives, dessert knives, fruit knives, fish knives, steak knives, bread and butter knives, vegetable knives, cheese knives, pocket knives, bread knives, carving knives, meat chopper, cook's knives, and butcher knives.

2 REFERENCES

The following standards contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

IS No.	*Title*
292 : 1983	Specification for leaded brass ingots and castings (*second revision*)
422 : 1981	Specification for brass sheet and strip for the manufacture of utensils (*second revision*)
617 : 1994	Aluminium and aluminium alloy ingots and castings for general engineering purposes (*third revision*)
620 : 1985	Specification for wooden tool handles — General requirements (*fourth revision*)
1067 : 1981	Electroplated coatings of silver for decorative and protective purposes (*second revision*)
1501 : 2002	Method for Vickers hardness test for metallic materials (*third revision*)
1570	Schedules for wrought steels:
(Part 2):1979	Carbon steels (unalloyed steels) (*first revision*)
(Part 6):1996	Carbon and alloy tool steels (*first revision*)
1586 : 2000	Method for Rockwell hardness test for metallic material (Scales A-B-C-D-E-F-G-H-K 15N, 30N, 45N, 15T, 30T and 45T) (*third revision*)
2283 : 2000	Nickel silver sheet, strip specification (*second revision*)
4170 : 1967	Brass rods for general engineering purposes
6911 : 1992	Stainless steel plate, sheet and strip (*first revision*)
14635 : 1999	Polytetrafluoroethylene (PTFE) materials for moulding and extrusion — Specification
15997 : 2012	Low nickel austenitic stainless steel sheet and strip for utensils and kitchen appliances — Specification

3 MATERIAL

3.1 Blades

The material for the blade of knives shall be of stainless of Grade 304/430 confirming to IS 6911 or grades of IS 15997 or carbon steel 98C6/80C6 confirming to IS 1570 (Part 2) or nickel silver confirming to IS 2283 or any other food grade stainless steel.

3.2 Handles

Type of handle and handle material used for the manufacturing of the knives shall be as per Table 1.

3.3 Rivets

The material of rivet used for the manufacturing of the riveted knife shall be mild steel, brass, or stainless steel except hinge pin and central pin of blade, which shall be of medium carbon steel in normalized condition.

3.4 Springs

Spring is applicable to fold the blade of pocket knife. The springs shall be made from carbon steel confirming to grade TAC-13 (T50NiCrMo4) of IS 1570 (Part 6) with sulphur and phosphorus not exceeding 0.035 percent each.

3.5 Bolster

The bolster, when provides, may be solid forged with the handle scales or made up of mild steel, brass or stainless steel.

3.6 Ferrules

The ferrules, if employed shall be cut from mild steel tube or formed from mild steel sheet and welded or brazed and then hot-dip galvanized.

3.7 Washer

The washer shall be made of mild steel.

3.8 Handle Scale

The handle scale may be made of stainless steel, brass, wood, plastics, horn or mild steel (nickel plated).

Table 1 Handles
(*Clause* 3.2)

Sl No.	Type of the Knife	Type of Handle Used	Material Used for the Handle
i)	Table knife, Dessert knife, Fruit knife, Cheese knife, Fish knife, Steak knife, Bread and butter knife, Pocket knife	Stainless steel solid handles	Grade 304/430 of IS 6911 or grades of IS 15997 or any other food grade stainless steel
		Stainless steel hollow handles	Grade 304/430 of IS 6911 or grades of IS 15997 or any other food grade stainless steel
		Brass hollow handle	Brass as per IS 422 or grade LCB2 of IS 292
		Nickel silver hollow handle	Nickel silver confirming to IS 2283
		Plastic handle	Unbreakable and odorless plastic. Free from deleterious substances, resist the action of dilute organic acids and shall not be so inflammable as to burst into flames when lightened match is applied to it OR PTFE conforming to IS 14365 OR Thermo setting plastics
ii)	Vegetable knife, Bread knife, Carving knife, Cook's knife, Butcher's knife, Meat chopper	Wood	Class 5 handles as per IS 620
		Plastic handle	Unbreakable and odorless plastic. Free from deleterious substances, resist the action of dilute organic acids and shall not be so inflammable as to burst into flames when lightened match is applied to it OR PTFE conforming to IS 14365 OR Thermo setting plastics

4 DESIGN, SHAPES AND DIMENSIONS

4.1 Design of the Handle

The design of the handles of the knives shall be as agreed to between the manufacturer and the purchaser. When knives, spoons and forks are required to be supplied in sets, the design of the handles and general appearance of the items in a set shall match.

4.2 Shape and Dimensions

The knives shall conform to the shape and dimensions shown in Fig. 1 to Fig 21. Knives with different shape and dimensions may be supplied with prior agreement between the manufacturer and the purchaser. However, the knives shall conform to the other provisions laid down in this standard.

4.2.1 *Table Knife*

4.2.1.1 *Cold forged and hot forged* (*see* Fig. 1)

4.2.1.2 *Hollow handle* (*see* Fig. 2)

4.2.2 *Desert Knife*

4.2.2.1 *Cold forged and hot forged* **(***see* Fig. 3)

4.2.2.2 *Hollow handle* (*see* Fig. 4)

4.2.3 *Fruit Knife*

4.2.3.1 *Cold forged and hot forged* (*see* Fig. 5)

4.2.3.2 *Hollow handle* (*see* Fig. 6)

4.2.4 *Cheese Knife* (*see* Fig. 7)

4.2.5 *Fish Knife* (*see* Fig. 8)

4.2.6 *Steak Knife* (*see* Fig. 9)

4.2.7 *Bread and Butter Knife* (*see* Fig. 10)

4.2.8 *Vegetable Knife* (*see* Fig. 11)

4.2.9 *Pocket Knife Typical* (*see* Fig. 12)

4.2.10 *Pocket Knife with Cork Opener, Typical* (*see* Fig. 13)

4.2.11 *Bread Knife* (*see* Fig. 14)

4.2.12 *Carving Knife* (*see* Fig. 15)

4.2.13 *Chef or Cook's Knife* (*see* Fig. 16)

4.2.14 *A Butcher's Flaying Knife*

4.2.14.1 *Large* (*see* Fig. 17)

4.2.14.2 *Small* (*see* Fig. 18)

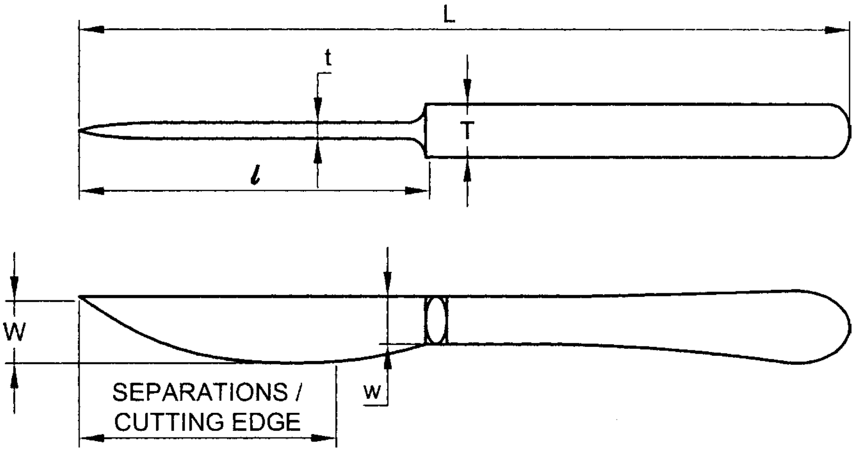
4.2.14.3 *Butcher's cutting knife* (*see* Fig. 19)

4.2.14.4 *Butcher's sticking knife* (*see* Fig. 20)

4.2.14.5 *Meat chopper* (*see* Fig. 21)

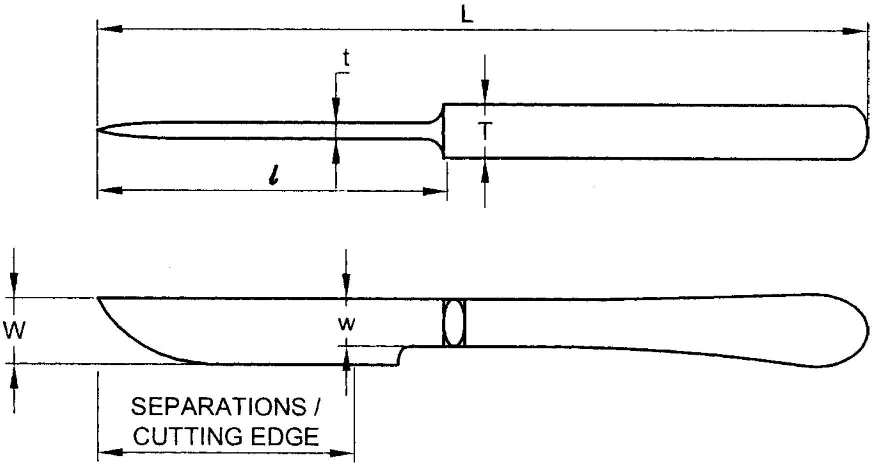
4.3 Dimensional Deviations for the Knives

Dimensional tolerances shall be as per Table 2.



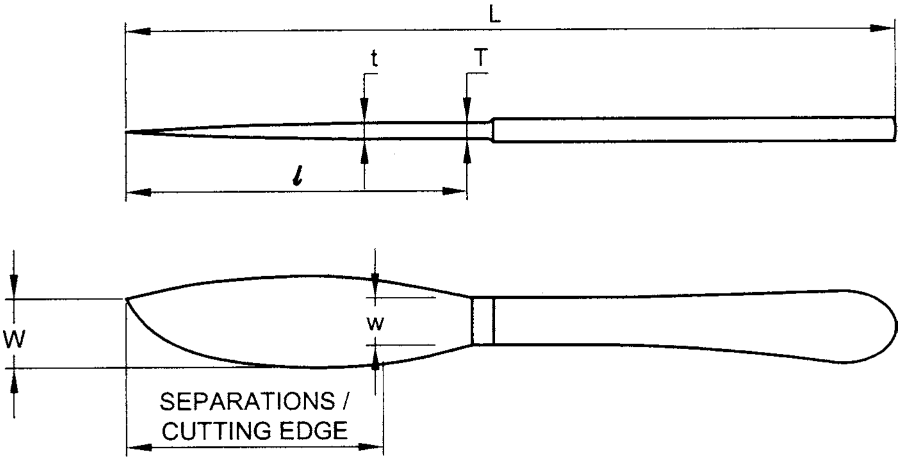
Type of Knife	*Dimensions in mm, Min*					
	Overall Length (L)	*Length of the Blade (l)*	*Width of the Blade (W)*	*Thickness of the Blade (t)*	*Thickness of the Bolster (T)*	*Width of the Bolster (w)*
Cold Forged Knife	205.00	105.00	17.00	1.5	6.00	12.00
Hot Forged Knife	205.00	140.00	23.00	2.5	12.00	15.00

FIG. 1 TABLE KNIFE COLD AND HOT FORGED



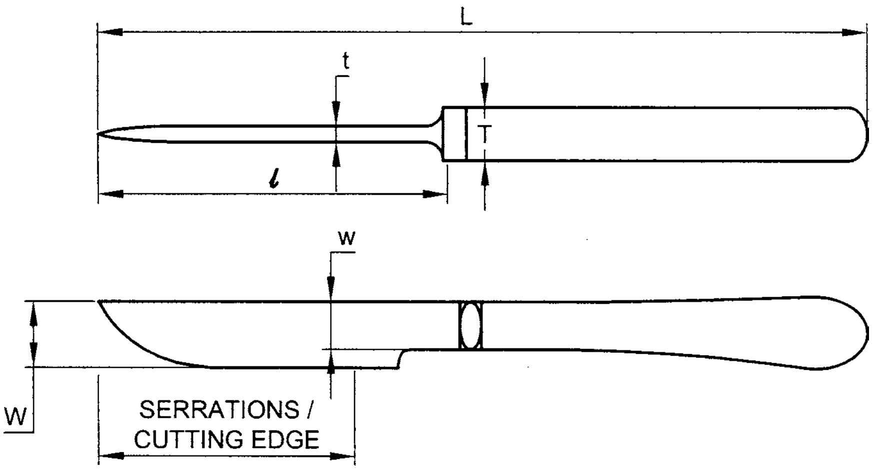
	Dimensions in mm, Min					
Type of Knife	*Overall Length (L)*	*Length of the Blade (l)*	*Width of the Blade (W)*	*Thickness of the Blade (t)*	*Thickness of the Bolster (T)*	*Width of the Bolster (w)*
Hollow Handle Knife	255.00	145.00	23.00	2.5	10.00	13.00

FIG. 2 TABLE KNIFE HOLLOW HANDLE



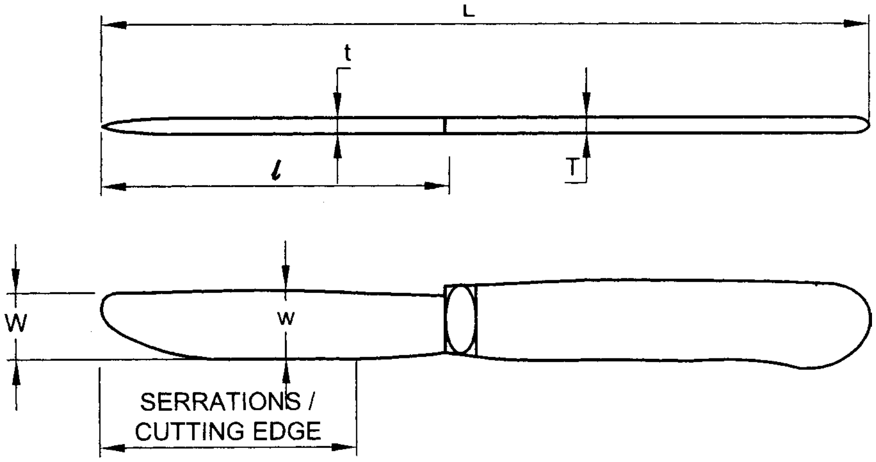
	Dimensions in mm, Min					
Type of Knife	*Overall Length* (*L*)	*Length of the Blade* (ℓ)	*Width of the Blade* (*W*)	*Thickness of the Blade* (*t*)	*Thickness of the Bolster* (*T*)	*Width of the Bolster* (*w*)
Cold Forged Knife (s)	200.00	90.00	20.00	2.00	6.00	12.00
Cold Forged Knife (l)	235.00	130.00	22.00	2.00	6.00	12.00
Hot Forged knife (s)	220.00	110.00	15.00	2.00	7.00	8.00
Hot forged knife (s)	225.00	130.00	22.00	2.00	10.00	15.00

Fig. 3 Desert Knife Cold and Hot Forged



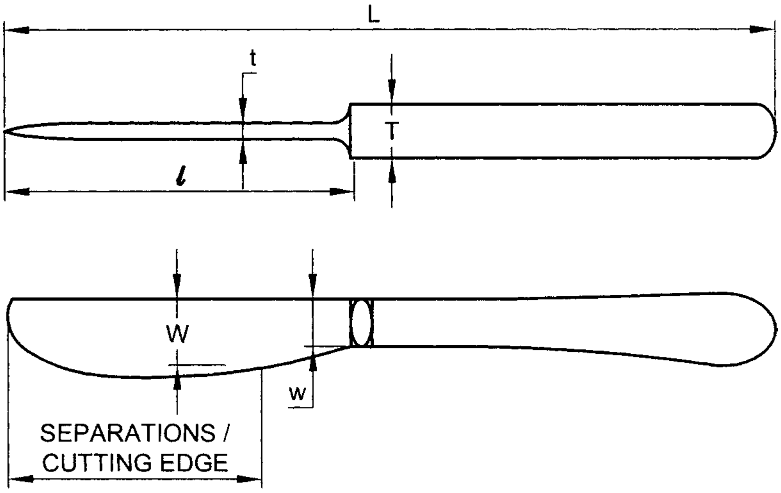
	Dimensions in mm, Min					
Type of Knife	*Overall Length* (*L*)	*Length of the Blade* (ℓ)	*Width of the Blade* (*W*)	*Thickness of the Blade* (*t*)	*Thickness of the Bolster* (*T*)	*Width of the Bolster* (*w*)
Hollow handle	230.00	120.00	22.00	2.00	10.00	15.00

Fig. 4 Desert Knife Hollow Handle



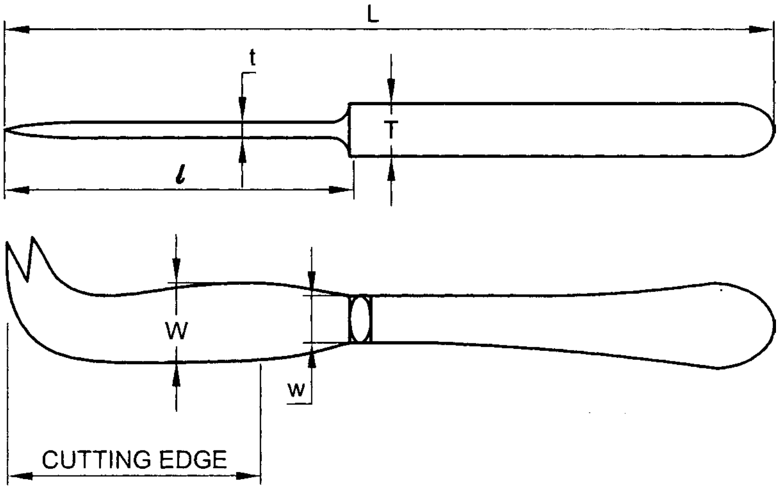
Type of Knife	*Dimensions in mm, Min*					
	Overall Length (*L*)	*Length of the Blade*(*ℓ*)	*Width of the Blade* (*W*)	*Thickness of the Blade* (*t*)	*Thickness of the Bolster* (*T*)	*Width of the Bolster* (*w*)
Cold Forged Knife	200.00	80.00	16.00	2.00	7.00	12.00
Hot Forged Knife	180.00	85.00	16.00	2.00	10.00	12.00

FIG. 5 FRUIT KNIFE COLD FORGED AND HOT FORGED



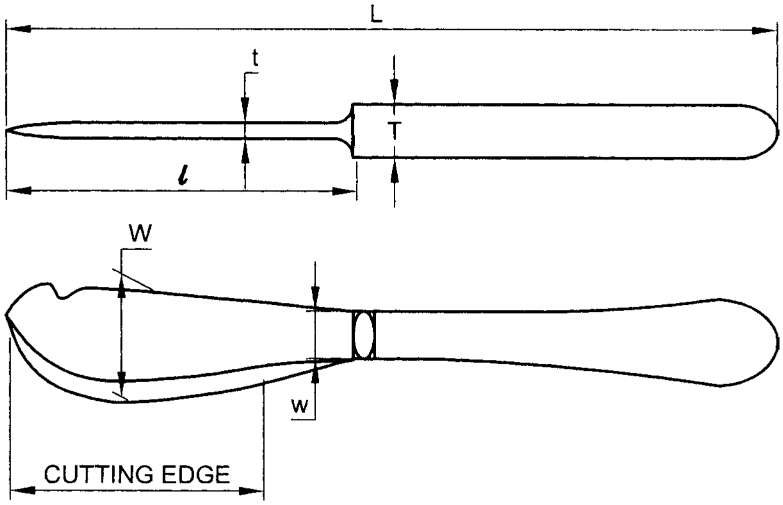
Type of Knife	*Dimensions in mm, Min*					
	Overall Length (*L*)	*Length of the Blade* (*ℓ*)	*Width of the Blade* (*W*)	*Thickness of the Blade* (*t*)	*Thickness of the Bolster* (*T*)	Width of the Bolster (*w*)
Hollow Handle Knife	220.00	110.00	20.00	2.00	12.00	15.00

FIG. 6 FRUIT KNIFE HOLLOW HANDLE



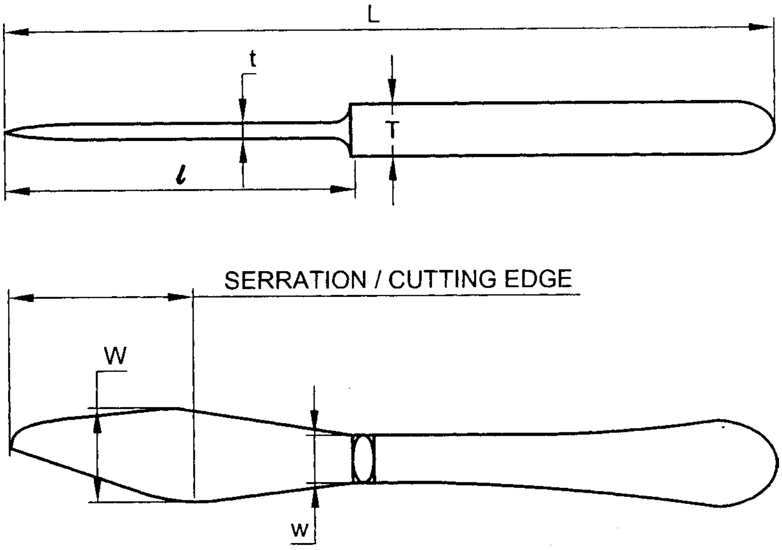
Type of Knife	*Dimensions in mm, Min*					
	Overall Length (*L*)	*Length of the Blade* (ℓ)	*Width of the Blade* (*W*)	*Thickness of the Blade* (*t*)	*Thickness of the Bolster* (*T*)	*Width of the Bolster* (*w*)
Cold Forged Knife	205.00	105.00	23.00	2.5	10.00	10.00
Hot Forged Knife	215.00	110.00	23.00	2.5	12.00	15.00
Hollow Handle Knife	215.00	105.00	23.00	2.5	10.00	15.00

FIG. 7 CHEESE KNIFE



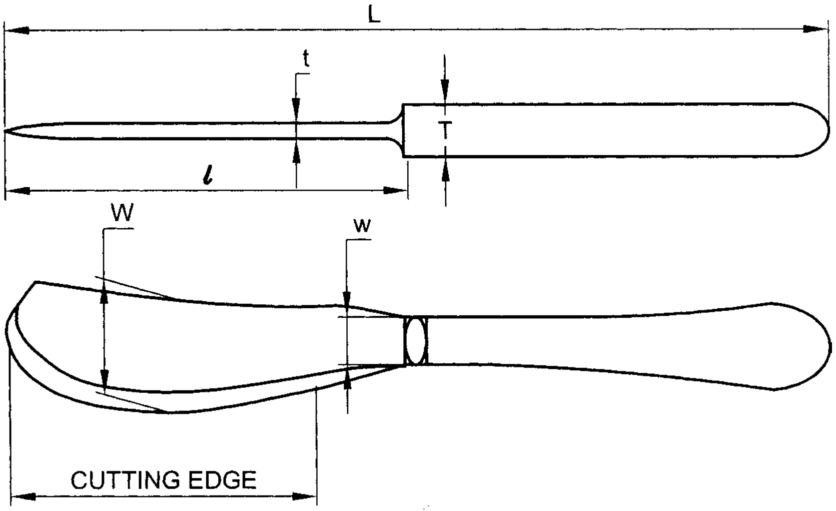
Type of Knife	*Dimensions in mm, Min*					
	Overall Length (*L*)	*Length of the Blade* (ℓ)	*Width of the Blade* (*W*)	*Thickness of the Blade* (*t*)	*Thickness of the Bolster* (*T*)	*Width of the Bolster* (*w*)
Cold Forged Knife	200.00	95.00	21.00	2.00	6.00	12.00
Hot Forged Knife	205.00	100.00	23.00	2.00	11.00	17.00
Hollow Handle Knife	220.00	115.00	23.00	2.5	10.00	15.00

FIG. 8 FISH KNIFE



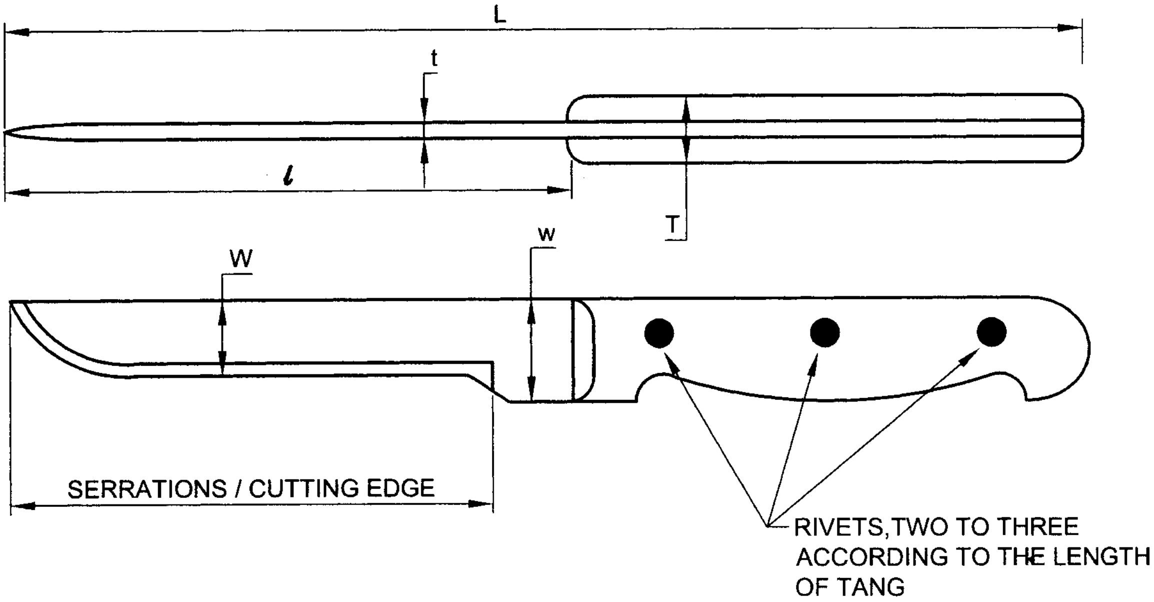
Type of Knife	Dimensions in mm, Min					
	Overall Length (L)	*Length of the Blade(ℓ)*	*Width of the Blade (W)*	*Thickness of the Blade (t)*	*Thickness of the Bolster (T)*	*Width of the Bolster (w)*
Cold forged knife	200.00	90.00	23.00	2.00	6.00	12.00
Hot forged knife	190.00	90.00	13.00	2.00	11.00	13.00

FIG. 9 STEAK KNIFE



Type of Knife	Dimensions in mm, Min					
	Overall Length (L)	*Length of the Blade (ℓ)*	*Width of the Blade (W)*	*Thickness of the Blade (t)*	*Thickness of the Bolster (T)*	*Width of the Bolster (w)*
Cold Forged Knife	200.00	90.00	20.00	1.5	6.00	12.00
Hot Forged Knife	190.00	95.00	13.00	2.00	11.00	13.00

FIG. 10 BREAD AND BUTTER KNIFE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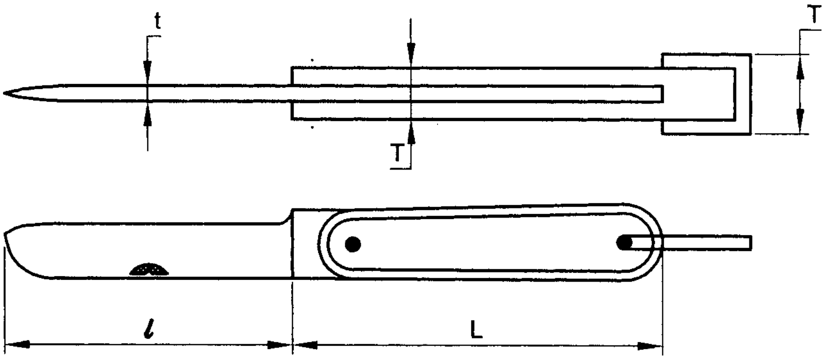
RIVETS,TWO TO THREE ACCORDING TO THE LENGTH OF TANG

Type of Knife	*Dimensions in mm, Min*					
	Overall Length (L)	*Length of the Blade (ℓ)*	*Width of the Blade (W)*	*Thickness of the Blade (t)*	*Thickness of the Bolster (T)*	*Width of the Bolster (w)*
Vegetable Knife (*S*)	180.00	90.00	12.00	1.60	10.00	14.00
Vegetable Knife (*L*)	270.00	150.00	17.00	1.00	16.00	23.00

NOTE — Stainless steel blade length through the handle is used for manufacturing of the vegetable knife may be supplied by the prior agreement between the purchaser and the supplier.

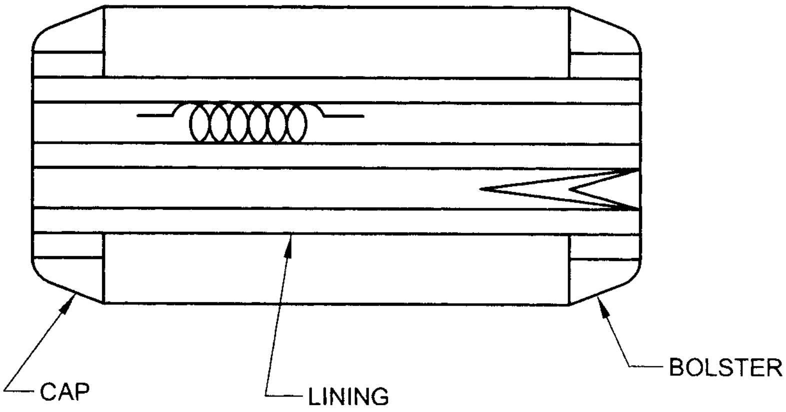
FIG. 11 VEGETABLE KNIFE



Dimensions in mm, Min			
Handle Length (L)	*Length of the Blade (ℓ)*	*Thickness of the Blade (t)*	*Thickness of Handle*
65.00	45.00	1.60	5.00
75.00	55.00	1.60	5.00
85.00	65.00	1.60	5.00

NOTE — However the detailed dimensions are left to the direction of manufacturers and are subject to the ageement between the purchaser and the supplier.

FIG. 12 POCKET KNIFE (TYPICAL)



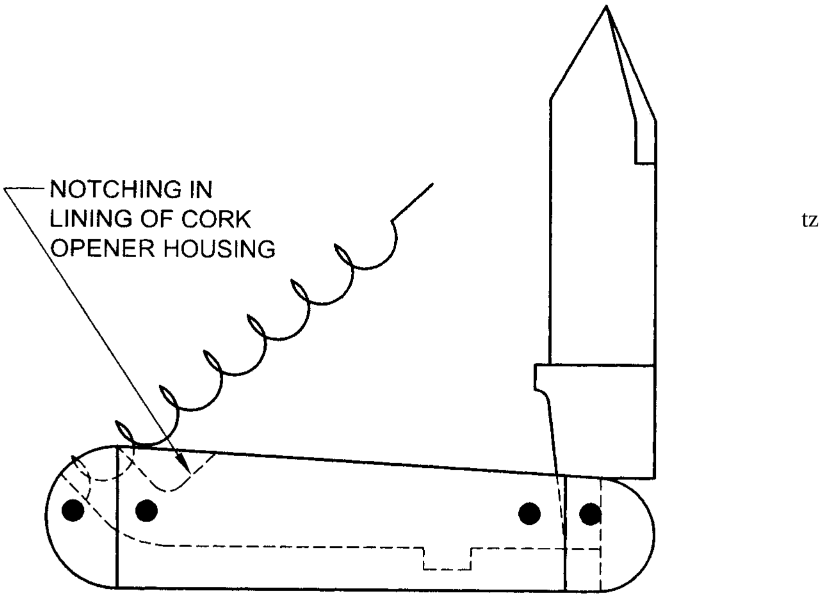


FIG. 13 POCKET KNIFE WITH CORK OPENER

Table 2 Dimensional Tolerance
(*Clause* 4.3)

Dimension	Tolerance
Total/Overall length (*L*)	± 5. 0 mm
Length of the blade (*l*)	+1.5 mm . 0.0 mm
Thickness of the bolster (*T*)	± 1.0 mm
Thickness of the blade (*t*)	± 0.5 mm
Width of the bolster (*W*)	+1.5 mm . 0.0 mm
Width of the blade (*w*)	+1.5 mm . 0.0 mm

5 MANUFACTURE

5.1 Knife handles shall meet the requirements as given in Table 3.

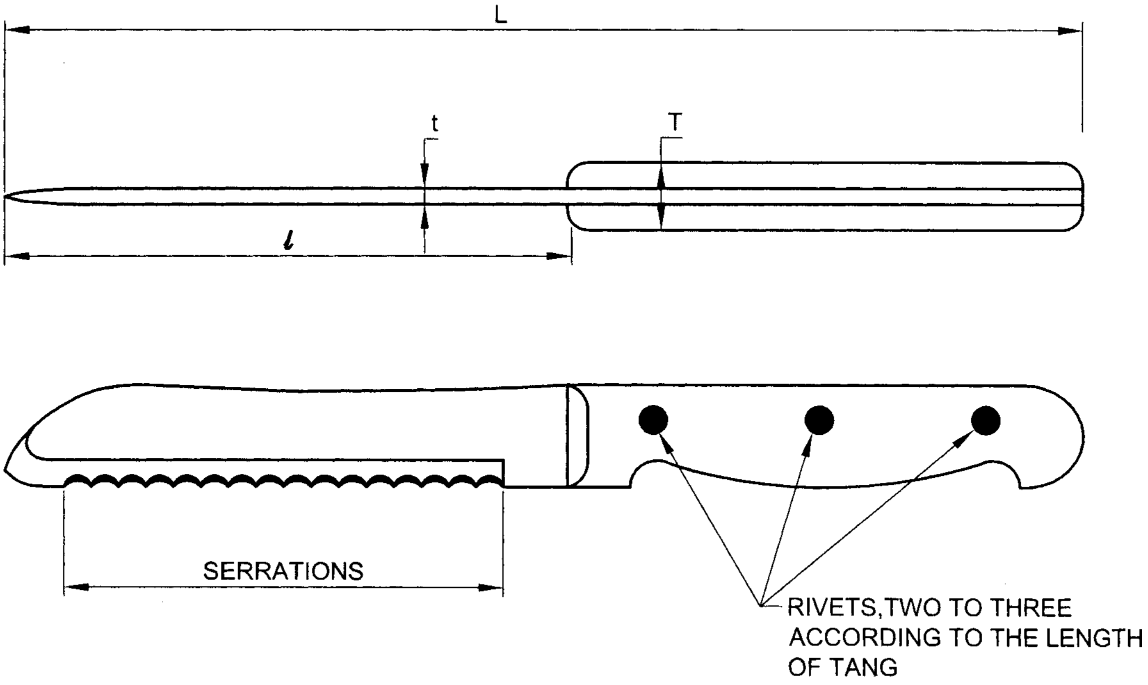
5.2 Blade for Solid Handle, Hollow Handle, Plastic Handle, Rivetted Handle Knife

5.2.1 The blades shall be stamped from sheet or shall be suitably forged. The serrations shall be well-formed and shall have a regular pitch. The tangs shall be well drawn out.

5.2.2 The blades shall be properly ground, tapering uniformly from the back to the cutting edge and from shoulder to the point. The cutting edge shall be sharp and ready for use. The blade shall be well and evenly hardened and tempered.

5.3 Blade for Pocket Knife

The cutting edge shall line in the central plane of its



	Dimensions in mm, Min				
Bread Knife	*Overall Length* (*L*)	*Length of the Blade* (*l*)	*Width of the Blade* (*W*)	*Thickness of the Blade* (*t*)	*Thickness of the Bolster* (*T*)
	315.00	210.00	23.00	1.00	14.00
	323.00	215.00	32.00	2.00	15.00

FIG. 14 BREAD KNIFE

Table 3 Specific Requirements for Handles of Knife

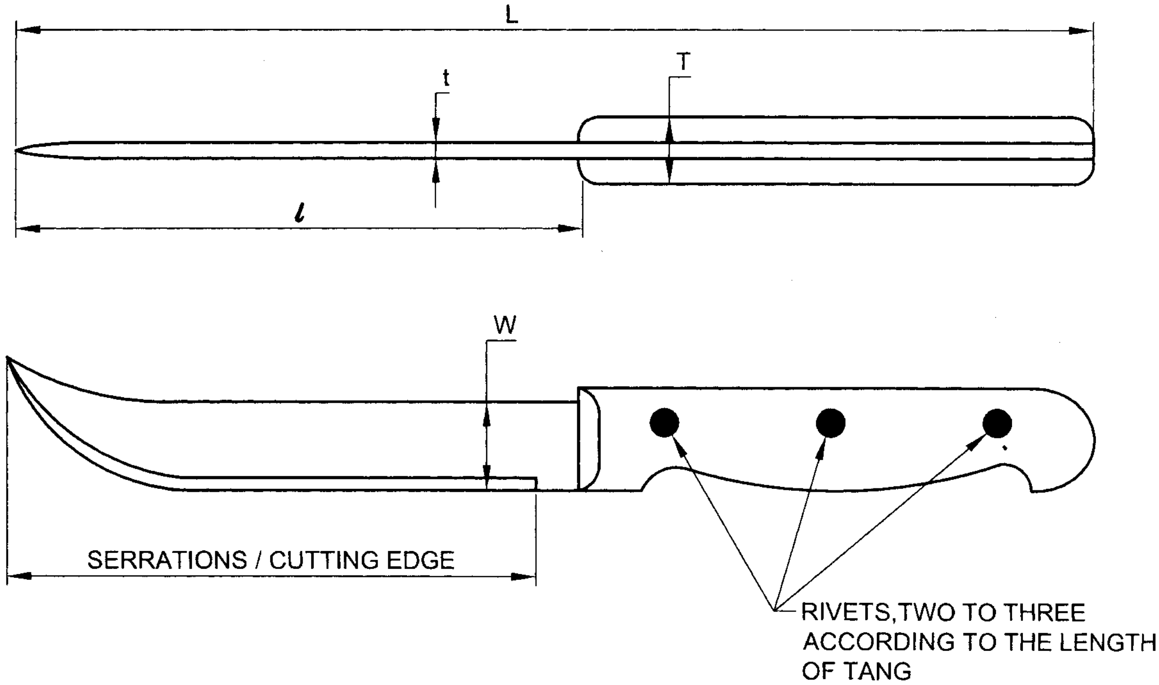
(*Clause* 5.1)

Sl No. (1)	**Type of the Knife** (2)	**Requirement of the Knife** (3)
i)	Solid handle knife	Knives with solid handles shall be forged in one piece
ii)	Hollow handle knife	Knives with hollow handles shall have the blades forged and the tangs well drawn. The scales shall fit closely to the tang and shall be finished flush and smooth. In the case of hollow handles made up of stainless steel, the joints shall be welded. In the case of nickel silver hollow handles, the joints shall be silver brazed
iii)	Plastic handle knife	Knives with plastic handles, handles are moulded; they shall be soundly moulded with the tang in position. The tang shall be properly shaped and grooved. Where plastics handles are fitted, the length of the tang shall be of appropriate to ensure rigid fixing
iv)	Rivetted handle knife	Knives with riveted handle shall be in accordance with the best practice. The handle scales shall fit closely to the tang throughout its length. The heads of the rivets shall be finished flush with the scales on both sides. Alternately, compression rivets may be used. The handle scales shall be flush with the tang throughout its length
v)	Pocket knife	The handle scales shall fit closely to the metal lining except when the scales themselves form the body. The blade and the spring shall be so housed as not have any gaps and the blade shall be free to open or close without shake or play

housing and shall not strike any part of the spring when the knife is closed and the blade shall lie entirely in the recess provided in the handle so that it does not project beyond when knife is closed. A nail groove shall be made on the blade for easy opening. The blade shall open easily under normal pull exerted by the hand. A ratchet lock shall be provided.

6 HARDNESS

The blades shall be evenly hardened and tampered to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SERRATIONS / CUTTING EDGE
RIVETS,TWO TO THREE ACCORDING TO THE LENGTH OF TANG

Carving Knife	*Dimensions in mm, Min*				
	Overall Length (L)	*Length of the Blade (l)*	*Width of the Blade (W)*	*Thickness of the Blade (t)*	*Thickness of the Bolster (T)*
	323.00	205.00	23.00	1.00	10.00
	420.00	280.00	32.00	2.00	25.00

FIG. 15 CARVING KNIFE

attain hardness within the range of 550-700 HV or 52-60 HRC. The testing point shall be as near as practicable to the cutting edge. The hardness shall be determined according to IS 1501 or IS 1586 as applicable.

7 WORKMANSHIP AND FINISH

7.1 The blades and the tangs shall be free from cracks, seems, flaws, scales, pits, burrs and other defect. The blades shall taper uniformly towards the cutting edge and also from the handle and to the pointed end.

7.2 The blades shall be free from rough grinding marks and shall be finished bright all over. The handles shall be finished smooth and their sharp edges and corners shall be rounded. The entire length of cutting edge shall be sharp and ready for use. The blade and the handle shall be in good alignment so that when placed on the table the knife rests without the blade touching the surface of the table.

8 TESTS

8.1 Test for Cutting Edge

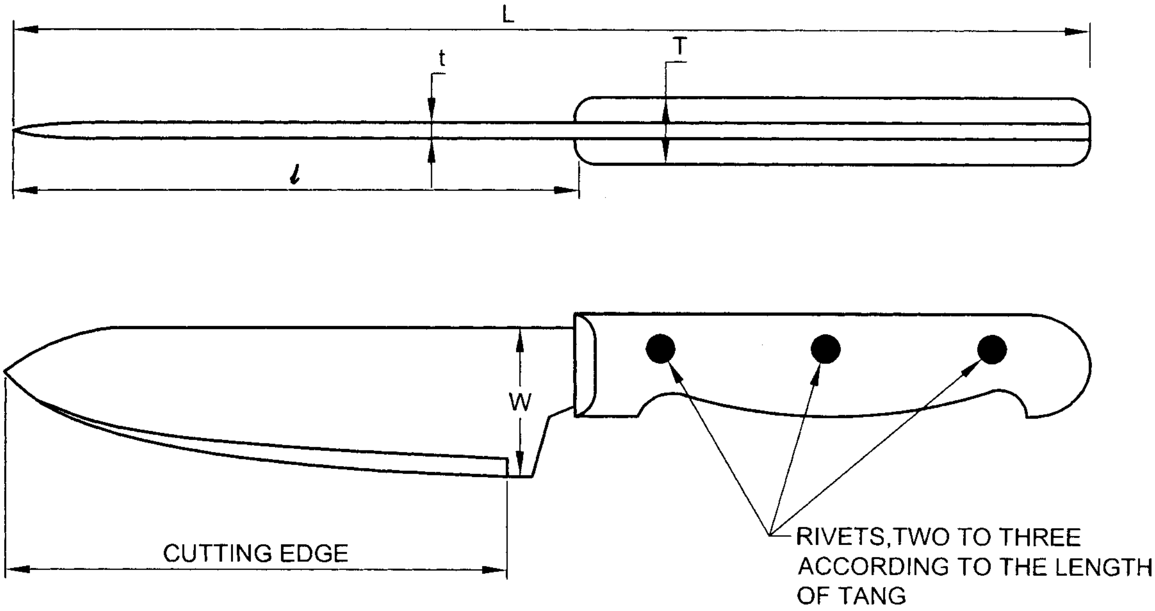
The cutting edge of the knife shall be made to strike 12 full blows in succession from a height of 250 mm on an aluminium block of not less than 99 percent purity (*see* IS 617) or block of well-seasoned timber, such as teak, sal, sissoo or rosewood (*see* **8.5.4**). The timber employed shall have a moisture content of not more than 12 percent moisture content. The blows shall be struck in such a manner that practically entire length of the cutting edge hits the surface of the test block. The cutting edge shall not show any sign of damage or distortion after the test and there shall not be any damage to any other part of the knife.

8.2 Flexibility Test only for Kitchen / Cutting Knives

The blades shall be bent to lie on the periphery of a wooden block segment of 100 mm radius and at least 22 mm in thickness. The blade shall not show any permanent set or damage on completion of the test (*see* Fig. 22).

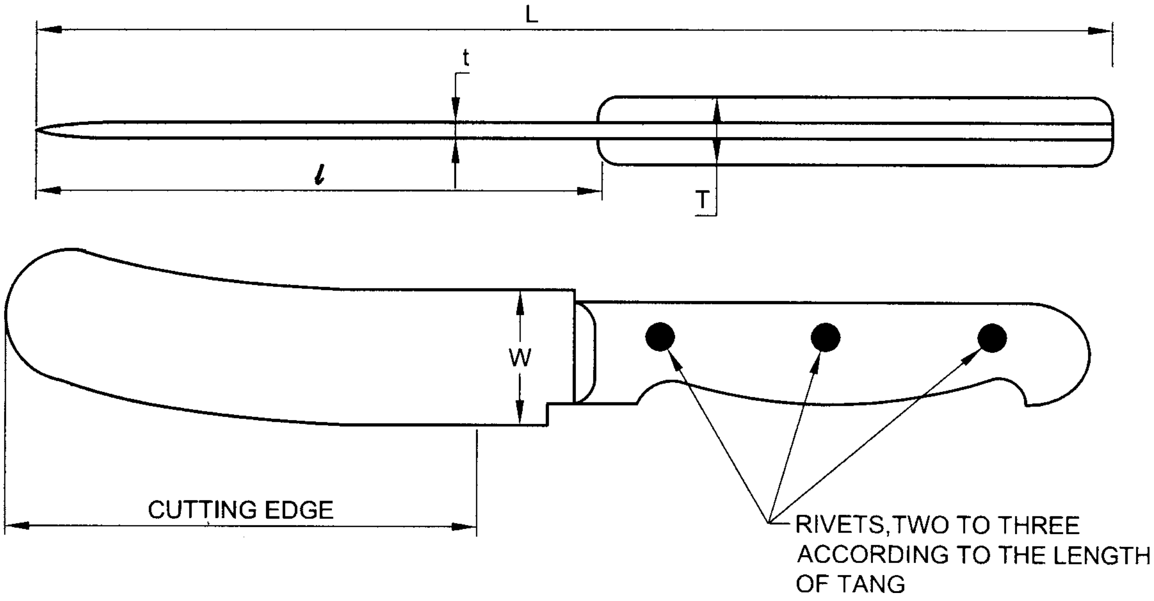
8.3 Corrosion or Staining Test

The surface of the blade shall be thoroughly washed with hot soapy water. Thoroughly rinse and then degrease the test specimens in acetone or methylated spirits, then wiped using a soft cloth. The blade shall



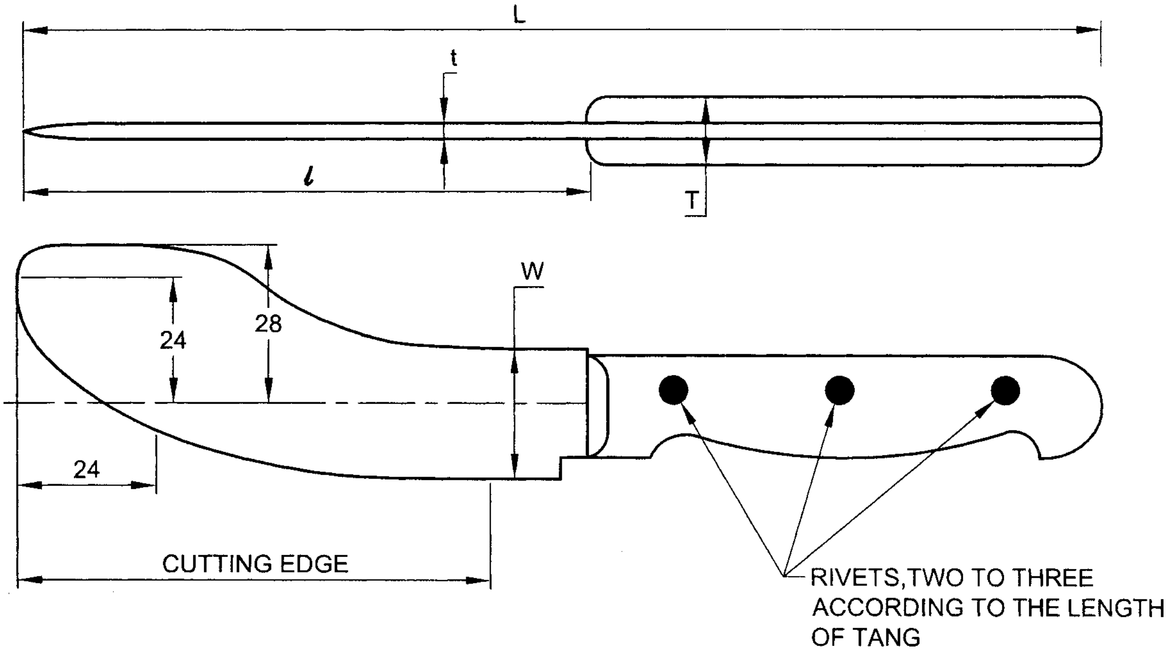
Chef or Cook's Knife	Dimensions in mm, Min				
	Overall Length (L)	Length of the Blade (ℓ)	Width of the Blade (W)	Thickness of the Blade (t)	Thickness of the Bolster (T)
	235.00	115.00	25.00	1.00	10.00
	320.00	200.00	38.00	1.50	16.00
	360.00	230.00	40.00	1.50	16.00

FIG. 16 CHEF OR COOK'S KNIFE



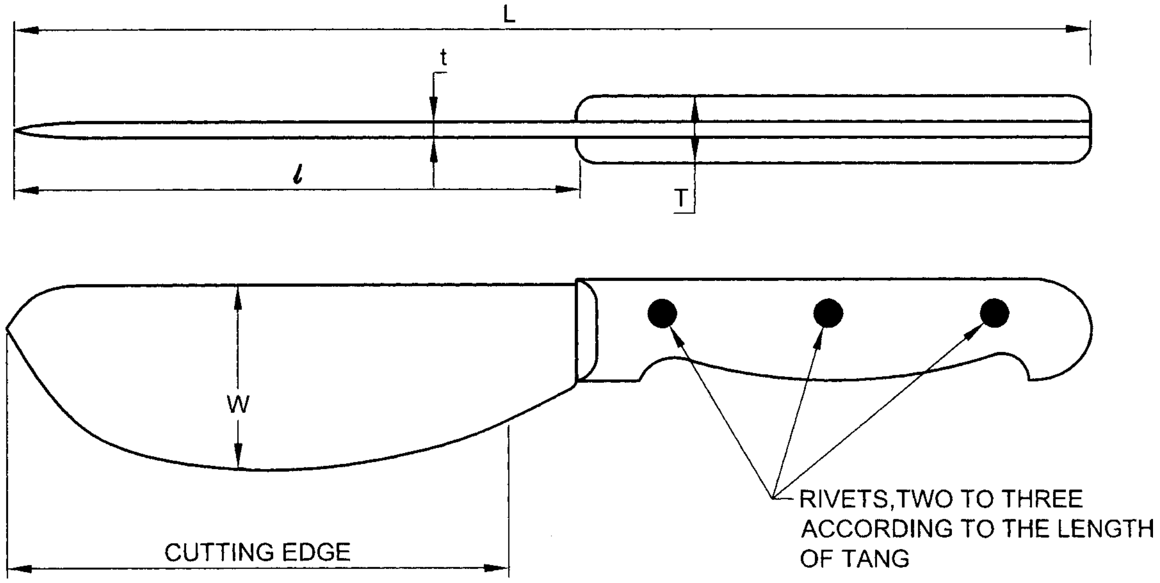
Butcher's Flaying Knife, Large	Dimensions in mm, Min				
	Overall Length (L)	Length of the Blade (ℓ)	Width of the Blade (W)	Thickness of the Blade (t)	Thickness of the Bolster (T)
	280.00	160.00	25.00	1.60	18.00

FIG. 17 BUTCHER'S FLAYING KNIFE, LARGE



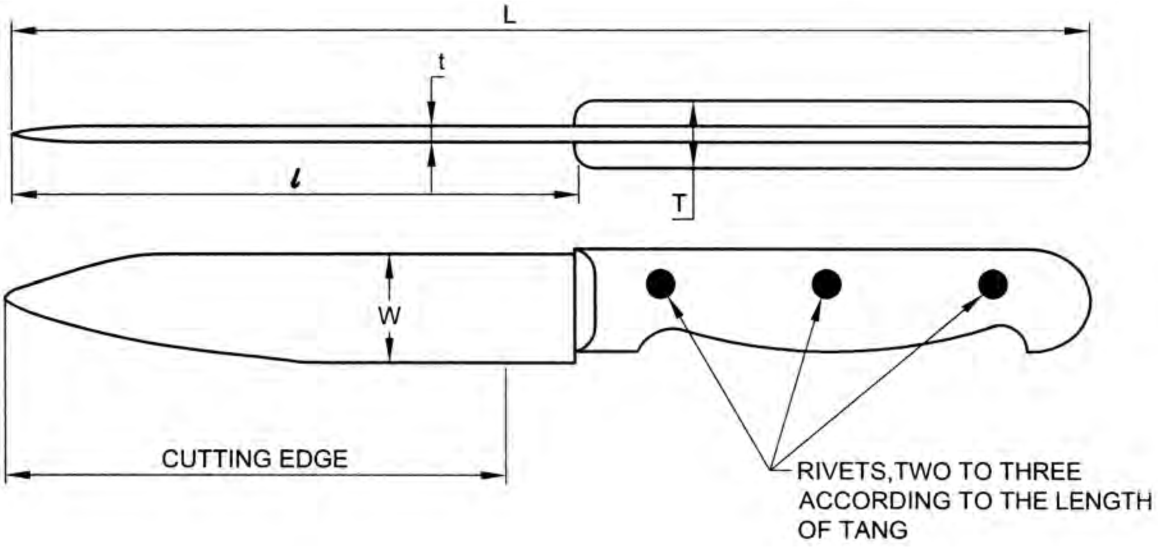
Butcher's Flaying Knife, Small	*Dimensions in mm, Min*				
	Overall Length (L)	*Length of the Blade (ℓ)*	*Width of the Blade (W)*	*Thickness of the Blade (t)*	*Thickness of the Bolster (T)*
	225.00	125.00	22.00	1.50	14.00

FIG. 18 BUTCHER'S FLAYING KNIFE, SMALL



Butcher's Cutting Knife	*Dimensions in mm, Min*				
	Overall Length (L)	*Length of the Blade (ℓ)*	*Width of the Blade (W)*	*Thickness of the Blade (t)*	*Thickness of the Bolster (T)*
	400.00	250.00	38.00	1.00	25.00

FIG. 19 BUTCHER'S CUTTING KNIFE



Butcher's Stiking Knife	Dimensions in mm, Min				
	Overall Length (*L*)	Length of the Blade (*ℓ*)	Width of the Blade (*W*)	Thickness of the Blade (*t*)	Thickness of the Bolster (*t*)
	280.00	180.00	25.00	1.60	13.00

FIG. 20 BUTCHER'S STICKING KNIFE

not show any sign of corrosion when it is dipped for 16 h in each of the following solutions (maintained at 60 ± 2°C), shall not show any sign of staining after removal from the solution:

a) Ten gram of glacial acetic acid (99 percent) dissolved in distilled water to make 100 ml, and

b) Five gram of pure sodium chloride dissolved in distilled water to make 100 ml.

8.4 Knives with Hollow Handle

Knives fitted with hollow handles after fitting shall be immersed for 30 s in clean air-free water maintaining at 80°C. They shall not show any expulsion of air-bubbles.

8.5 Knives with Plastics Handles

8.5.1 *Boiling*

The knife shall be immersed for 1 h in a boiling 5 percent soap solution, then rinsed immediately in water at 15°C to 20°C and then dried for an hour in an oven maintained at 60°C. This procedure shall be repeated four times. On completion of test, the handle shall not show any sign of cracking, chipping or discoloring of the plastics and the tang shall neither become loose nor there any other damage.

8.5.2 *Impact*

This test shall be conducted after the boiling test. The knife shall be held with the handle facing downwards and dropped from a height of 1.2 m on to a concrete floor or a flat stone five times in succession. The handle shall not show any sign of cracking, breaking or chipping of the plastics and tang shall neither become loose nor there any other damage.

8.5.3 *Staining*

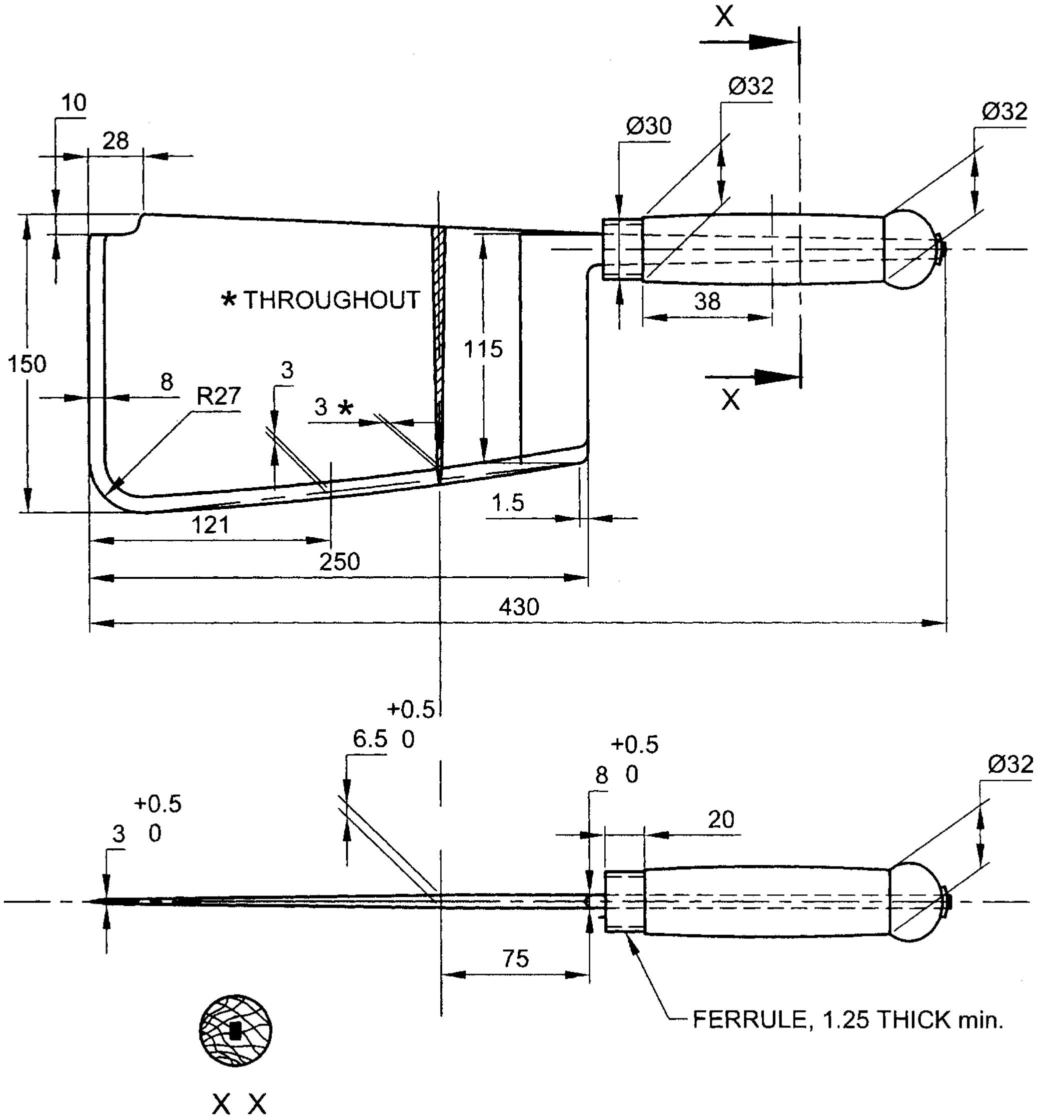
8.5.3.1 The plastics handle shall be cut into three pieces and each piece shall be immersed in one of the following solutions maintained at room temperature:

a) Sodium chloride solution, 10 percent (*w/v*).

b) Acetic acid solution, 5 percent (*v/v*).

c) Sodium carbonate solution, 2 percent (*w/v*).

8.5.3.2 Each piece shall be taken out after 24 h, rinsed with tap water and wiped with a dry cloth. It shall then be examined and immersed again in the same solution for 24 h. This process shall be repeated seven times. During and at the end of seven days test there shall be



All dimensions in millimetres.

FIG. 21 MEAT CHOPPER

no perceptible change in the appearance of the plastic material.

8.5.4 *Cutting (for Meat Chopper only)*

The meat chopper shall be made to cut in one single stroke a 15 mm diameter bar of well-seasoned timber. The following list gives range of the suitable timbers:

Trade Name	*Botanical Name*
Sissoo	*Dalbegia sissoo*
Babul	*Acacia arabica*
Sal	*Shorea robusta*

After cutting the bar, the cutting edge shall not show any sign of damage or get blunt.

8.5.5 *Striking (for Meat Chopper only)*

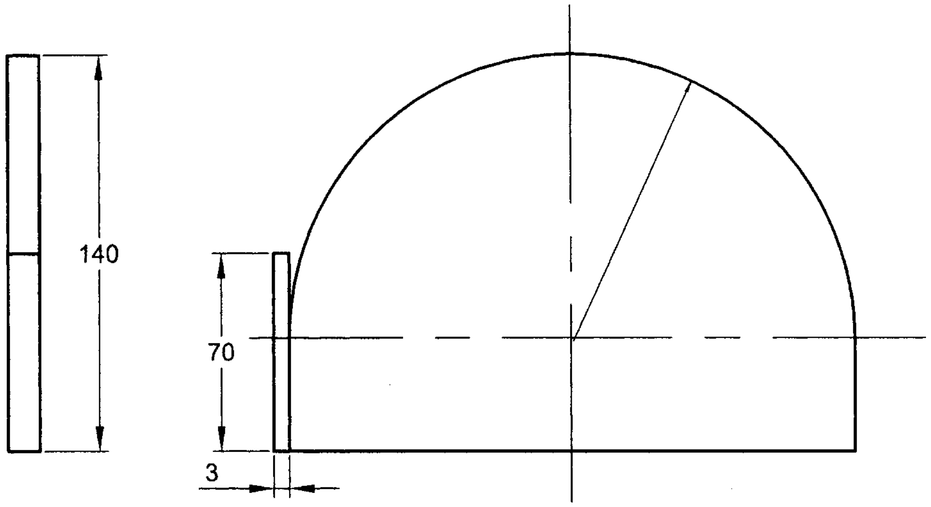
The meat chopper shall be made to strike five full blows by hand in a manner consistent with its normal use on a brass rod conforming to IS 4170. The cutting edge shall not show any sign of damage or get blunt.

9 SAMPLING

9.1 The number of knives to be selected from a lot for ascertaining conformity to this standard shall be as agreed to between the manufacturer and the purchaser. A recommended sampling scheme and criteria for conformity for knives is given in Table 4 of **9.3**.

9.2 Lot

In any consignment, all the knives of the same type of handle, shape and size, manufactured from the same material under relatively similar conditions of manufacture shall be grouped together to constitute a lot.



All dimensions in millimetres.

FIG. 22 FLEXIBILITY TEST ONLY FOR KITCHEN/CUTTING KNIVES

9.3 The number of knives to be selected from a lot for ascertaining conformity to the requirements of the specifications shall be according to Table 4. The knives in the sample shall be selected at random from the lot. If the knives are packed in cartons, as a first step at least 25 percent of the cartons, shall be selected at random and then from each selected carton, equal number of knives be taken out at random so as to make the required sample size.

9.4 Number of Tests and Criteria for Conformity

9.4.1 The knives selected at random according to **9.1** shall be examined for the requirements of **4** and **7**. A knife failing to satisfy any one or more of these requirements shall be regarded as defective. The lot shall be considered as conformity to the requirements of **4** and **7**, if the number of defective knives in the sample does not exceed the number given in col 3 of Table 4.

9.4.2 If the lot conforms to the requirements of **9.4.1**, a sub-sample of size given in col 4 of Table 4 shall be taken from the knives selected as in **9.3**. Each of knife in the sub-sample shall be tested for the requirements for **6** , **8** and **11**. A knife not satisfying any one or more of the requirements of **6**, **8** and **11** shall be regarded as defective. The sample shall be considered to conform to the requirements of **6**, **8** and **11** if number of defectives in sub-sample does not exceed the numbers given in col 5 of Table 4.

10 MARKING

10.1 Each fork shall be legibly marked with the following on underside of the handle preferably by engraving or etching:

a) Type of knife;
b) Material of knife;
c) Material grade;

Table 4 Sample Size and Criteria for Conformity
(*Clauses* 9.3, 9.4.1 *and* 9.4.2)

No. of Knives in a Lot	For Clause No. 4 & 7		For Clause No. 6 , 8 and 11	
	Sample size	Acceptance number	Sub-sample size	Acceptance number
(1)	(2)	(3)	(4)	(5)
Up to 50	5	0	2	0
51 to 150	13	1	4	0
151 to 500	32	3	6	0
501 to 1 000	50	5	8	0
1 001 to 3 000	80	7	12	1
3 001 to 10 000	125	10	16	1
10 001 and above	200	14	20	2

d) Type of handle;
e) Manufacturer's name, initials or registered trade-mark;
f) Made in India;
g) Batch No./Date of manufacturing if desired by the purchaser.

Example : Cook/SS/304/Plastic/XX Pvt Ltd/Made in India/YYY

10.2 BIS Certification Marking

10.2.1 Each knife may also be marked with the standard mark.

10.2.2 The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standards Act*, 1986 and the Rules and Regulations made thereunder. The details of conditions under which the license for the use of the Standard Mark may be granted to manufacturers or producers, may be obtained from the Bureau of Indian Standards.

11 PRESERVATIVE TREATMENT AND PACKING

11.1 The handles, if made of wood, shall be given two coats of good quality varnish/paint.

11.2 The knives shall be wrapped in soft tissue paper or wax paper or suitable polythene bags and packed in cartons. The number of knives to be packed in one carton shall be at the discretion of the manufacturers. The cartons shall bear the type and number of knives packed the name of the manufacturer and the country of the manufacturer.

ANNEX A

(*Foreword*)

COMMITTEE COMPOSITION

Utensils Cutlery and Domestic Hardware Sectional Committee , MED 33

Organization	*Representative (s)*
Ministry of Micro Small and Medium Enterprises, New Delhi	Shri Niranjan Naik **(*Chairman*)** Shri K. L. Rao (*Alternate*)
Anna Aluminium Company Pvt Ltd, Kizhakkambalam	Shri K. Vijaya Prasad Shri K. C. Pillai (*Alternate)*
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Member Secretary
Shri Chandan Gupta
Scientist 'B' (MED), BIS

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